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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/825,476	04/15/2004	Gary B. Gordon	10040442-1	8124
57299	7590	04/09/2007	EXAMINER	
AVAGO TECHNOLOGIES, LTD. P.O. BOX 1920 DENVER, CO 80201-1920			LEWIS, DAVID LEE	
		ART UNIT		PAPER NUMBER
				2629
SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE		
3 MONTHS	04/09/2007	PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/825,476	GORDON ET AL.	
	Examiner	Art Unit	
	David L. Lewis	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 15 April 2004.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-20 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08).
Paper No(s)/Mail Date <u>4/15/2004; 7/19/2005</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. **Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Albulet et al. ((699570) in view of Casebolt et al. (2005/0190158).**

As in claim 1, Albulet et al. teaches of an apparatus for controlling the position of a screen pointer, column 3 lines 4-15

the apparatus comprising: a movement sensor for sensing relative movement,
figure 2 item 203

and generating corresponding movement data, **column 5 lines 48-54, column 6 lines 1-20**

the movement sensor configured to generate compressed data representing the movement data, **column 2 lines 3-25;**

and a wireless transmitter for wirelessly transmitting the compressed data, **figure 2 item 209.**

However Albulet fails to specifically teach of said sensor configured to detect movement between the apparatus and a surface.

While said surface detection feature appears to be inherent to the teaching of Albulet, because mouse optical sensors are known for surface contact and surface monitoring to determine mouse position, **Casebolt et al. teaches of the optical sensor providing said known surface contact feature**, figure 1 item 18, paragraph 26.

Therefore it would have been obvious to the skilled artisan at the time of the invention to combine the features of Albulet and Casebold to provide for a surface based optical sensor as taught by Casebolt et.al. in the wireless mouse as taught by Albulet because Albulet teaches of a wireless mouse having an optical sensor, and as known in the art said optical sensors have the know surface contact configuration as taught by Casebolt, as found in claim 1.

As in claim 2, Albulet et al. teaches of wherein the apparatus is a wireless mouse, column 2 lines 1-5.

As in claim 3, Albulet et al. in view of Casebolt teaches of and further comprising: a light source for illuminating the surface, thereby generating reflected images, **figure 1 item 20**, and wherein the movement sensor is

configured to generate digital images based on the reflected images, and generate the movement data based on a correlation of successive ones of the digital images, **paragraph 26.**

As in claim 4, Albulet et al. teaches of wherein the compressed data comprises a magnitude value representing a magnitude of movement, and an angle value representing an angle of movement, column 7 lines 13-30. wherein the direction component reads on said angle value.

As in claim 5, Albulet et al. teaches of wherein the magnitude and angle values are compressed based on a compression algorithm, column 2 lines 3-35.

As in claim 6, Albulet et al. in view of Casebolt teaches wherein the compressed data comprises acceleration data indicative of an acceleration between the apparatus and the surface, column 6 lines 10-25 and 35-43, wherein as known in the art motion is described in terms of displacement, time, velocity, and acceleration, Casebolt, paragraphs 26, 29, 43, wherein Casebolt measures motion as known in the art of optical sensors.

As in claim 7, Albulet et al. in view of Casebolt teaches wherein the acceleration data is compressed based on a compression algorithm, Albulet, column 2 lines 10-25, wherein the compression of the motion information as taught by Albulet is shown, which includes acceleration data as supported by Casebolt.

As in claim 8, Albulet et al. in view of Casebolt teaches wherein the apparatus is configured to selectively wirelessly transmit the acceleration data or velocity data, Casbolt, paragraphs 43 and 53, wherein acceleration can be zero and therefore not calculated or transmitted.

As in claim 9, Albulet et al. in view of Casebolt teaches wherein the movement sensor is configured to generate the compressed data based on a compression algorithm, column 2 lines 10-25.

As in claim 10, Albulet et al. in view of Casebolt teaches wherein the compression algorithm is a logarithm-based compression algorithm, column 2 lines 10-25, column 6 lines 10-55, wherein said algorithm is a known design choice.

As in claim 11, Albulet et al. in view of Casebolt teaches wherein the movement sensor is configured to identify a difference between the movement data and the compressed data for a current reporting period, and adjust the movement data for a subsequent reporting period based on the identified difference, column 2 lines 10-25, column 6 lines 23-42, column 10 lines 1-36, figure 3, 7, & 8.

As in claim 12, Albulet et al. in view of Casebolt teaches wherein the compressed data includes a total number of bits that varies based on a magnitude of the relative movement, column 6 lines 10-55.

As in claim 13, Albulet et al. in view of Casebolt teaches and further comprising a lookup table for storing compressed data values, wherein each compressed data value represents a two dimensional movement, figure 7 item 703.

As in claim 14, Albulet et al. in view of Casebolt teaches wherein the apparatus is configured to wirelessly transmit the compressed data at irregular intervals, column 2 lines 1-28.

As in claim 15, Albulet et al. in view of Casebolt teaches wherein the apparatus is configured to wirelessly transmit the compressed data only when there has been a change in movement since a previous motion report, figure 3.

As in claim 16, Albulet et al. in view of Casebolt teaches wherein the apparatus is configured to wirelessly transmit button press information at irregular intervals, figure 2 item 207, column 6 lines 1-10.

As in claim 17, Albulet et al. in view of Casebolt teaches wherein the apparatus is configured to wirelessly transmit button press information only when the apparatus senses that a button on the apparatus has been pushed by a user, figure 2 item 207, column 6 lines 1-10.

As in claim 18, Albulet et al. in view of Casebolt teaches wherein the apparatus is configured to wirelessly transmit button press information using a lesser number of bits than there are buttons on the apparatus that are

represented by the button press information, figure 2 item 207, column 6 lines 1-10.

As in claim 19, Albulet et al. teaches method of generating movement data with a wireless pointing device, column 3 lines 4-15,

the method comprising: sensing relative movement, **figure 2 item 203,**

and generating corresponding movement data, **column 2 lines 3-25, column 5 lines 48-54, column 6 lines 1-20;**

generating a compressed representation of the movement data, **column 2 lines 3-25;**

and wirelessly transmitting the compressed representation, **figure 2 item 209.**

However Albulet fails to specifically teach of said sensor configured to detect movement between the apparatus and a surface.

While said surface detection feature appears to be inherent to the teaching of Albulet, because mouse optical sensors are known for surface contact and surface monitoring to determine mouse position, **Casebolt et al. teaches of the**

optical sensor providing said known surface contact feature, figure 1 item 18, paragraph 26.

Therefore it would have been obvious to the skilled artisan at the time of the invention to combine the features of Albulet and Casebold to provide for a surface based optical sensor as taught by Casebolt et al. in the wireless mouse as taught by Albulet because Albulet teaches of a wireless mouse having an optical sensor, and as known in the art said optical sensors have the known surface contact configuration as taught by Casebolt, as found in claim 19.

2. **Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Albulet et al. ((699570) in view of Willemin et al. (2005/0200606) or Muranami (2002/0097225).**

As in claim 20, Albulet et al. teaches navigation sensor for generating movement data to control the position of a screen pointer, column 3 lines 4-15, figure 2,

the navigation sensor comprising: a sensor configured to sense reflected images, figure 2 item 203, column 5 lines 48-54, column 6 lines 1-10;

a processor for generating movement data based on the digital images, figure 2 item 201

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and compressing the movement data to generate compressed data, **column 2 lines 1-28;**

and an interface for outputting the compressed data, **figure 2 item 209, figure 7 item 707, column 10 liens 1-23.**

However Albulet is silent as to the specifics of said sensor having an array and analog to digital converter.

Willemin et al. teaches of an optical sensor array, figure 1 item 15, and analog to digital converter, paragraph 24.

Murannami teaches of an optical sensor array, figure 5 item 122, and analog to digital converter, figure 5 item 124.

Because Albulet teaches of a wireless mouse device having a optical sensor known in the art, and both Willemin et al. and Murannami teach of optical sensors known in the art, **it would have been obvious to the skilled artisan at the time of the invention to provide the sensor array of Willemin or Muranami in the the wireless mouse of Albulet because Albulet teaches of an optical sensor for converting motion of a mouse into digital images for the purpose of providing a wireless mouse, and Willemin and Muranami provide said known features, as found in claim 20.**

Conclusion

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **David L. Lewis** whose telephone number is **(571) 272-7673**. The examiner can normally be reached on MT and THF from 8 to 5. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala, can be reached on **(571) 272-7681**. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is **(571)-273-8300**.

4. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Examiner: David L. Lewis

March 26, 2007

